

OBJECT LOCATION SYSTEM AND METHOD USING RFID

ABSTRACT OF THE DISCLOSURE

A system and method is provided for locating objects using RFID tags. The system and method uses an RFID reader and a distance calculator to efficiently and accurately determine the location of objects that include an RFID tag. The RFID reader transmits a plurality of signals to the RFID tag, with the plurality of signals having different fundamental frequencies. In response, the RFID tag backscatter modulates the plurality of transmitted signals to create a plurality of backscatter modulated signals. The RFID reader receives and demodulates the plurality of backscatter modulated signals. The distance calculator determines the phase of the plurality of backscatter modulated signals and determines a rate of change of the phase in the backscatter modulated signals with respect to the rate of change in the fundamental frequency of the transmitted signals and uses this information to calculate the distance to the RFID tag.